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Chapter 11 - Environmental Analysis for the Rhinelander Sector-Existing Conditions and Potential Impacts

Physical Geography of the Area

Most of the landscape affected by the Tripoli to Rhinelander portion of the project is located in the Northern Highland region of Wisconsin. This region is typified by stony soils, nearly level terrain or gently rolling terrain and numerous lakes and marshes.

The bedrock geology of this region is granite and undifferentiated igneous and metamorphic rocks. The bedrock is overlain by glacial till and glacial outwash.

The northeastern part of the project area encompasses the southern reaches of the Northern Highland lakes region. This region is dominated by small, irregularly shaped lakes, connected by streams that have irregular courses. All of the lakes originate from glacial activity but the origins of the lake basins are diverse. Some are in shallow depressions in glacial till while others are in hollows in outwash plains. The smaller hollows are kettles formed at the close of the glacial period by the melting of the buried ice blocks.

Soils in this region are most susceptible to erosion in the eastern portion of the project area where topography is undulating to gently rolling in nature. For the most part the soils are formed from stony glacial till. Acidic peatlands can be found in wetlands throughout the project area, interspersed with less acidic wetlands supporting scrub/shrub vegetation.

Cultural development

The proposed 115 kV transmission line routes associated with the Tripoli-Rhinelander portion of this project passes near or through several small communities, including Brantwood, Tripoli, Heafford Junction, Bradley, and two moderately sized cities, Rhinelander and Tomahawk. The area is a popular tourist area in all seasons and there are

many vacation homes and resorts throughout the project area. There are several large blocks of publicly owned land in the project area. Lincoln County Forest land lies along the southern and eastern portions of the project area along segments 474, 438, and 415 and segment 431, which parallels USH 51, and crosses Oneida County Forest land. The state of Wisconsin recently purchased land near and surrounding the ANR natural gas pipeline east of USH 51 between the Cross Country and Highway 8 Routes. In addition, the University of Wisconsin-Stevens Point (UW-SP) Foundation owns nearly 1,000 acres of land east of CTH H and north of Perch Lake (along segment 415z). This property is known as Treehaven and is used extensively and by a wide range of clientele for ecological research, outdoor education, and recreation purposes. A more detailed discussion of Treehaven is found later in this chapter.

Agricultural impacts

While the landscape is largely forested throughout this portion of the project area, agricultural land use is present along several route segments near the proposed Tripoli Substation, along USH 8, and also east of USH 51 along Hat Rapids Road and the existing 115 kV transmission line. Center-pivot irrigation is used in some fields adjacent to Hat Rapids Road. Because the proposed routes are located mostly along existing roads in these agricultural areas, effects on crop yields and interference with farm machinery due to pole placement within fields should be minimized (see Chapter 5 for a general discussion of these types of impacts).

Agricultural land use in this portion of the project area, potential impacts and possible mitigation measures are discussed in more detail in the AIS issued by the DATCP. (See Appendix A.) The following information, presented by county, describes general agricultural activities in the area:

Lincoln County

Land in farms totaled 14.8 percent of Lincoln County in 1998. Farms are more common in the area of the county that is south and east of Merrill. The average farm is approximately 197 acres in size. Approximately 26 percent of Lincoln County farms are dairy operations with an average herd size of 48 cows. Approximately 58 percent of Lincoln County farmland is used to grow hay. Lincoln County ranks fifth among Wisconsin counties in the production of mink. In addition to dairy, the county produces some Christmas trees and some ginseng. A few farms with irrigated land are located north of Merrill and north and east of Tomahawk. Two cranberry operations are located near the Wisconsin River.

Oneida County

Oneida County ranks fourth in the production of mink and ninth in the production of potatoes. Farms are scattered throughout the western part of this county. Approximately 5.4 percent of the land in Oneida County is farmland; of that, almost 42 percent is used for cropland. About 15 percent of the cropland in Oneida County is irrigated. In 1997 there

were 117 farms with an average size of 334 acres. There are two dairy farms in Oneida County and 31 beef operations.

Price County

Agricultural production in Price County is concentrated in the north central and southeast part of the county as well as southwest of Kennan and Catawba and east of Phillips and north of Prentice. Land in farms accounts for approximately 11 percent of the county. There are 370 farms in the county with an average size of 250 acres. There are 117 dairy farms with an average of almost 40 cows per herd. A variety of other agricultural operations, including Christmas trees, ginseng, small beef operations, and specialty operations such as ostrich and bison farms are scattered throughout the county.

Tripoli-Rhineland 115 kV Transmission Line Routes

The proposed facilities for the Tripoli-Rhineland 115 kV line are considerably smaller in size and require a smaller ROW than the 345 kV line described earlier in this document. The routes for the 115 kV line connect a new proposed Tripoli Substation near Tripoli to the existing Highway 8 Substation in Rhineland. There are four proposed sites for the new Tripoli Substation; two are located on West Knox Road and two on CTH YY. A physical description of the four sites and the potential impacts that would be caused by substation construction can be found in Chapter 8.

The discussion of the proposed routes has been divided into four sections. Two of the sections describe the alternative transmission line routes on either side of USH 51; another section describes the possible ways for the 115 kV line to exit from each of the proposed substation sites; and another section describes connecting segments that could be used to join the routes on the west side of USH 51 to the routes on the east side of USH 51.

Transmission line design

The Tripoli to Rhineland 115 kV transmission line facility would be constructed on steel poles that vary from 70 to 110 feet in height. The pole spacing (span length) would be between 600 and 800 feet. The majority of this line would be constructed as a single circuit line. (See Figure Vol. 2-4.) It would have three conductors and one shield wire. The section of the project that extends north from the Treehaven property across Hat Rapids Road to the Highway 8 Substation in Rhineland follows an existing 115 kV transmission line corridor. The applicants have proposed double circuiting the new line with the existing line or using a mixture of double circuiting and side-by-side construction. (See Figure Vol. 2-5.) The single pole double circuit structures would carry six conductors and a shield wire.

Exit routes from the proposed Tripoli Substation

This section describes the segments or segment combinations that could be used to exit the proposed Tripoli Substation and approach the three routes that are west of USH 51 - the North Route, the Central Route, and the South Route. There are four proposed locations for the Tripoli Substation. Site 8 is located on the east side of West Knox Road and site 9 is on the west side, at 3.5 and 3.0 miles south of USH 8, respectively. Sites 1 and 2 are located on the east side of CTH YY, at 4.0 and 3.5 miles south of USH 8, respectively. The alternate ways to exit these substation sites and join one of the three alternative transmission line routes that begin at CTH YY and extend east to USH 51 are described below.

Exit routes from Substation Sites 8 and 9

Table 11-1 Exit Routes from Substation Sites 8 and 9

Segments	Approach to:	Length (miles)	Primary Land Use/ Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length (feet)	Line Design*	Structure Height (feet)
482, 467 and 469 (S9) plus 478 (S8)	North and Central Routes	6.8 7.4	Upland/ wetland forest	35.5 38.5	43	100% - West Knox Road and USH 8	600-800	Single circuit	70-100
108bv and 476 (S8) plus 478 (S9)	South Route	4.8 5.4	Upland/ wetland forest	44 47	80/43	14% CTH YY	600-800	Single circuit	70-100
108bv and 471 (S8) plus 478 (S9)	North and Central Routes	7.3 7.9	Upland/ wetland forest and agricultural	56 59	80/43	46% - CTH YY	600-800	Single circuit	70-100

*All of the single circuit structures would consist of a steel davit-arm design shown in Figure 6-20 in Chapter 6.

Approaches to the North or Central Route

- The first approach consists of segments 482, 467, and 469 (segment 478 would be also needed if Site 8 were approved). This exit route extends in a northerly direction along the east side of West Knox Road from Substation Sites 8 or 9 to USH 8 and then east along USH 8 from West Knox Road to CTH YY.

As proposed, this exit route would share a ROW with roadways over its entire length. The portion of the ROW adjacent to the roads would cross 1.5 acres of Christmas tree farm, 10 acres of pasture or open grassland, 16.5 acres of upland forest that is dominant in aspen and 6.5 acres of wetland that is primarily forested. About 700 linear feet of the proposed ROW crosses the Lincoln County Forest. Ninety-five percent of the new ROW is zoned agricultural and the remaining 5 percent is zoned residential or commercial.

North of the substation sites, the line would also pass near the Knox Creek Heritage Center museum site located at N4517 West Knox Road as it approaches USH 8. The Heritage Center was established in 1995 to preserve the ethnic and cultural heritage of the early settlers of the area and provide an educational resource to the local community. The Heritage Trail, a 5-mile nature and historic trail, would run under the transmission line for a short distance on Knox Road and then east and south of the Heritage Center site to the Knox Cemetery at Old Mill Road and West Knox Road. In addition to running directly under a proposed route, the Trail would be crossed by two other route segments that proceed east from Substation Site 8 or 9 toward CTH YY.

If this exit route were used, the line would pass within 300 feet of twenty residences; three of them are within 100 feet of the proposed route. Additionally there are five commercial buildings and several agricultural outbuildings within 300 feet. This exit route crosses Somo Creek. One property on West Knox Road is on the National Historic Register—the Matt Johnson Log House. There is also a Finnish cemetery near USH 8 between West Knox Road and CTH YY.

- The second approach consists of segments 108bv and 471. From Substation Site 8 or 9 this exit route extends east from West Knox Road to CTH YY, traversing cross-country on new ROW, and then uses segment 471 to go north to USH 8.

As proposed, this exit route corridor shares with CTH YY for 46 percent of its length and traverses cross-country for the remaining 54 percent of its length. The cross-country portion of the route crosses 21.5 acres of forest that is dominated by aspen and 9.0 acres of forested wetland. The route also crosses 8.5 acres of agricultural land that is in open pasture or grassland. There are nine homes within 300 feet of the proposed route; two homes would be within 100 feet of the new transmission line.

Approach to the South Route

- The first approach consists of segments 108bv and 476. This exit route would extend east from West Knox Road toward CTH YY, traversing cross-country on new ROW. At CTH YY, the route would turn south for 0.66 miles to intersect with the South Route. En route to the South Route, both segments cross the Heritage Center Trail.

Segment 108bv extends in an east-west direction cross-country for 4 miles between Substation Site 8 and CTH YY. The new ROW would affect approximately 22.5 acres of upland forest dominated by aspen and 11.5 acres of forested wetland. In addition, 3.5 acres of non-forested wetland and 1.5 acres of pasture or open grassland would be impacted by this segment. This segment crosses Knox Creek and Squaw Creek. The proposed transmission line could easily span these creeks. As proposed, 19 percent of the length of this route is shared with CTH YY. The remaining 81 percent would require creation of a new 80-foot wide ROW corridor. There are no homes within 300 feet of this segment.

The portion of the ROW adjacent to CTH YY on segment 476 crosses three acres of agricultural land that is presently in pasture or open grassland, 1.5 acres of wetland, primarily forested wetland and one acre of aspen forest. There is one home within 100 feet of the proposed centerline and another home between 100 and 300 feet from the proposed transmission line ROW centerline.

Segment 478 is between the sites for Substation 8 and Substation 9. It extends along the east side of West Knox Road for 0.6 miles. The portion of the ROW adjacent to the road crosses non-forested wetland, upland forest-primarily aspen, and forested wetland. It also crosses Knox Creek. There is one home located within 300 feet (between 100 and 150 feet) of the proposed centerline of this segment.

Exit route from Sites 1 and 2

Table 11-2 Exit route from Substation Sites 1 and 2

Segment	Approach to:	Length (miles)	Primary Land Use/Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length	Line Design*	Structure Height (feet)
471	North & Central Routes	3.4	Agricultural	18	43	CTH YY	600-800	Single circuit	70-100

*All of the single circuit structures would consist of a steel davit-arm design shown in Figure 6-20 in Chapter 6.

Approach to the North or Central Route

- This exit route consists only of segment 471. It extends in a northerly direction along CTH YY for 3.4 miles from Substation Site 2 to USH 8. The portion of the ROW adjacent to the road crosses seven acres of agricultural land that is open pasture or grassland, 3.5 acres of upland forest that is dominated by aspen, and 2.5 acres of forested wetland. There are eight homes within 300 feet from the proposed line, two of these are within 100 feet of the line.

Approach to the South Route

- Substation Sites 1 and 2 are located on CTH YY at the western terminus of the South Route. No approach segments are needed.

Alternative Routes West of USH 51 (CTH YY to USH 51)

There are three primary transmission line route alternatives that proceed east to USH 51 from CTH YY. The North and Central Routes begin at the intersection of CTH YY and USH 8, and the South Route begins at Substation Site 1. Following is a description of each route and the potential environmental effects of building and maintaining the 115 kV line along the proposed route.

North Route

The North Route proceeds in a general easterly direction from the intersection of USH 8 and CTH YY, paralleling USH 8 for 1.6 miles. At a point approximately 1.6 miles east of CTH YY near the town of Tripoli, the North Route shifts north a few hundred yards to follow the Wisconsin Central Railroad corridor that lies parallel to USH 8. The route continues along the railroad corridor adjacent to USH 8 for 5.6 miles, crossing the Little Somo River. At a point approximately 7.2 miles east of CTH YY, the North Route veers off of the railroad corridor and follows Old 8 Drive for 3.5 miles crossing Johnson Creek. The route angles northeast across Section 35 in Little Rice Township to Kelley Dam Road. The route turns north, paralleling Kelley Dam Road for 0.6 mile. It turns east for 0.5 mile, then north to approach Little Rice Dam Road. The route follows Little Rice Dam Road east and CTH Y north for a short distance before turning east onto Prairie Rapids Road. The route continues east on Prairie Rapids Road for 1.5 miles, then turns north on Lee Road and east again and traverses cross-country for 2.2 miles across the Tomahawk River and CTH L. At this point, the North Route proceeds in a general northeast direction paralleling a multiple use trail for a short distance before turning northeast and proceeding cross-country for approximately 1.5 miles to USH 51. This trail connects the Hiawatha Trail, which passes through the Tomahawk area to the state-owned Bearskin Trail that begins at CTH K near Harshaw. At USH 51, the North Route turns south and follows the west side of the highway for about 2.5 miles to the Wisconsin Central Limited Railroad corridor. Table 11-3 describes the segments that comprise the North Route and some of the ROW and line design characteristics of the route segments.

Figure 11-1 North Route

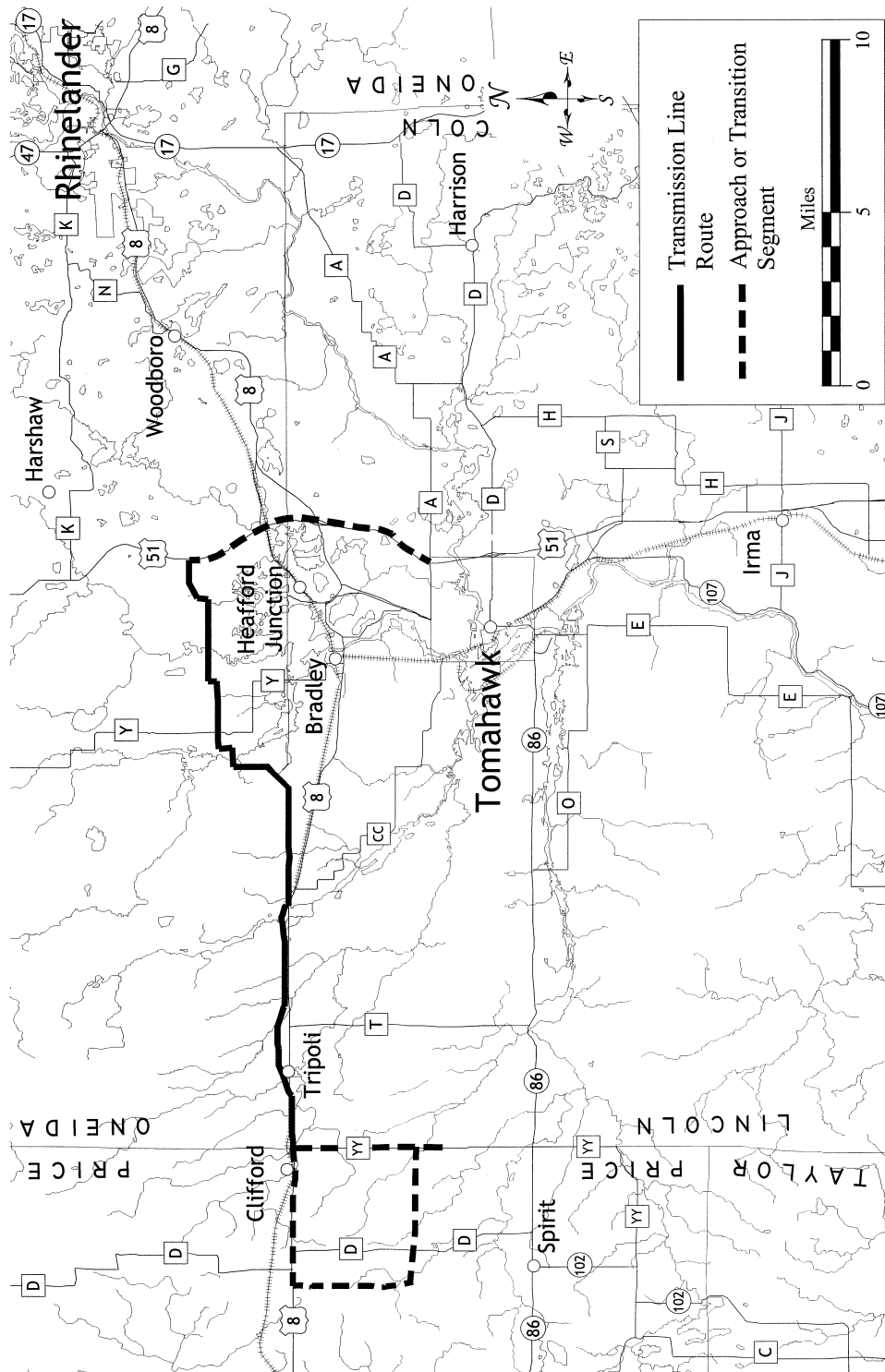


Table 11-3 Segments used in North Route

Segment	Length (miles)	Primary Land Use	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length (feet)	Line Design *	Structure Height (feet)
462	0.3	Agricultural	1.0	43	100% USH 8	600-800	Single circuit	70-100
458	0.8	Agricultural	4.5	43	100% USH 8	600-800	Single circuit	70-100
457	0.5	Upland forest	3.0	43	100% USH 8	600-800	Single circuit	70-100
455	0.6	Upland forest	5.0	70	100% Wisconsin Central RR	600-800	Single circuit	70-100
451	0.6	Upland forest	5.5	70	100% Wisconsin Central RR	600-800	Single circuit	70-100
450	1.3	Upland forest	11.5	70	100% Wisconsin Central RR	600-800	Single circuit	70-100
447	2.9	Upland forest	25.0		100% Wisconsin Central RR	600-800	Single circuit	70-100
477	0.1	Commercial	0.5	43	100% Road	600-800	Single circuit	70-100
475	0.3	Commercial / upland forest	1.5	43	100% Road	600-800	Single circuit	70-100
442	0.9	Upland forest	4.5	43	100% Road	600-800	Single circuit	70-100
441b	5.0	Upland forest	28.5	43	90% Road	600-800	Single circuit	70-100
441a	0.9	Upland forest	6.5	43	55% Road	600-800	Single circuit	70-100
440a	0.9	Upland forest	6.0	43	70% Road	600-800	Single circuit	70-100
431	7.1	Upland forest	54.5	43/80	25% Recreational trail, road	600-800	Single circuit	70-100
Total	22.2		157.5					

* All of the single circuit structures would consist of a steel davit-arm design shown in Figure 6-20 in Chapter 6.

Natural resources

Lakes

Near the Little Rice River, the North Route passes close to the southern shore of Killarney Lake. This lake is a recreational area. Construction of the line would not directly affect the lakebed or shoreline. Implementation of a soil erosion plan would avoid the potential for

sedimentation into the lake. The primary impact to the lake resource would be aesthetic, impact since the poles and conductors would likely be visible to recreational users of the lake.

The potential for bird/wire collisions would also be present for waterfowl and other birds flying between Killarney Lake and the Rice River Flowage to the south.

Rivers and streams

The North Route crosses several small streams, specifically Johnson Creek, Rennhak Creek, Hauser Creek, Brant Creek, and Scott Creek. These streams are all part of the Little Somo River watershed and several of them are classified as trout streams. The DNR has classified Brant Creek as an ORW.²⁶⁵ Most of the streams on this route could be spanned using the proposed single pole davit arm design. Impacts could be further reduced by allowing for an adequate buffer zone, in which no construction would occur, on either side of the stream. Avoiding placement of poles within this buffer zone would minimize potential sedimentation to the stream.

The North Route also crosses the Little Somo River, the Little Rice River, and the Tomahawk River. The route approaches but does not cross the Big Somo River, which DNR has also classified as an Outstanding Resource Water. The Little Somo River flows into Somo Lake, a recreation area for water enthusiasts who may enjoy boating, fishing and other water sports and activities. The new line would parallel an existing railroad bed as it crosses the river. Constructing this river crossing from the railroad bed using sediment barriers near the river banks would minimize sedimentation to the Somo River and reduce the potential water quality impacts to Somo Lake.

The Little Rice River crossing occurs in a location where the proposed route traverses cross-country. In this area the river is bounded by uplands to the east and wetlands to the west. Sedimentation of the river and its adjacent wetlands caused by construction and maintenance activities would be a concern, especially given the cross-country nature of the crossing. Also, placement of the line over an aquatic system that is commonly used by waterfowl and other large water birds could result in bird collisions with the conductors. This would be especially true during foggy conditions or at night when the conductors would be less visible.

The North Route also crosses the Tomahawk River. As at the Little Rice River, this crossing would not be adjacent to roads or other infrastructure corridors. At the proposed crossing location, the Tomahawk River is passing through a shallow gorge and the banks of the river are quite steep. Because there is no established roadbed or railroad bed from which to work,

²⁶⁵ The DNR maintains a list of OERW of the state. ORWs include all national and state wild and scenic rivers. ORWs are defined as lakes or streams having excellent water quality, high recreational and aesthetic quality fishing and that are free from point source or non-point source pollution. ERWs are similar to ORWs in terms of water quality, recreational and aesthetic value and wildlife habitat but may be susceptible to future point source pollution. OERWs provide unique environmental settings that have not been significantly affected by human activities. The designated streams are identified in the state administrative code.

the risk for sedimentation would be increased. The crossing location is primarily bordered by upland forest vegetation and an 80-foot wide clearing through this area would be required. Little Rice Creek crosses USH 51 at the intersection of the highway and the Wisconsin Central Railroad corridor at the eastern terminus of the North Route.

Table 11-4 Rivers and streams on the North Route

Brant Creek τ^*	Little Rice River τ	Johnson Creek τ
Hauser Creek	Rennhak Creek	Tomahawk River
Little Somo River τ	Scott Creek τ	Little Rice Creek

τ Classified as a trout stream

* Designated Outstanding or Exceptional Resource Water

Wetlands

The North Route crosses several large wetland complexes. One of these complexes is a forested wetland located approximately one mile east of USH 51 in an area with very limited access. Because the wetland supports primarily black spruce and tamarack over a sphagnum mat, it would be very susceptible to long-term construction impacts. (See Wetlands section in Chapter 5.) Use of DNR BMP and other mitigation measures, such as matting and winter construction, described in Chapter 6 could reduce the potential for impacts to this wetland. There are also several wetland complexes north of the railroad grade and east of Tripoli. These complexes are a mixture of deciduous forested and shrub/scrub wetland. Limiting construction to the winter months or with equipment parked on or adjacent to the railroad grade could minimize impacts to wetland vegetation and soils.

Table 11-5 Wetland resources affected by the North Route

Length of Forested Wetland Crossed	Length of Non-forest Wetland Crossed	Total Length of Wetland Crossed	Area of Wetland Affected
0.61 mile	1.61 miles	2.32 miles	17.0 acres

Wildlife

The proposed transmission line can impact wildlife through direct harm to some species and by altering the suitability of wildlife habitat. Construction activities can be noisy for a long enough period to discourage nesting or burrowing. Machinery and workers could crush vegetation that provides food, nesting sites, and cover in the ROW. Construction equipment driving through a stream can disturb the streambed and cause downstream siltation, degrading aquatic habitats of stream fauna. ROW clearance and line construction near lakes, rivers and streams can cause damage to fauna habitat from erosion and siltation. Transmission line corridors can fragment habitat by converting woodland to shrub and grassland (see the forest section for information on forest fragmentation) or degrade habitat through introduction of exotic invasive plant species. Chemicals used in controlling ROW vegetation near rivers and streams can drift or run off, polluting the water. Transmission

line conductors, structures, and associated guy wires can pose a physical hazard to birds flying near the transmission line. Rivers and their associated wetlands can also serve as corridors for daily and migratory flights by birds.

Threatened and endangered resources

The DNR has identified two species of concern on this route. The Wisconsin Natural Heritage Inventory records indicate that the bald eagle (*Haliaeetus leucocephalus*) has been observed along this route near segment 431. Residents from the area have also reported many other eagle sightings. Disturbance near the nesting sites in early spring is of greatest concern. Care should be taken to identify any nests that occur near the zone of construction and if nests are present, construction in these areas should occur in late summer or early fall after the nestlings have fledged.

In addition the Pygmy Snaketail Dragonfly, a state-threatened species, has been found in the Tomahawk River. This insect would be most susceptible to transmission line disturbance during construction when it is in its larval stages. The dragonfly resides in small, fast-moving streams during its larval and egg stages and emerges as an adult. In its adult stage, disturbance from transmission line construction would not be a concern.

Potential impacts to this dragonfly could be minimized if construction equipment does not enter the Tomahawk River and if proper erosion control measures are implemented. Specific impacts on aquatic species in streams and wetlands, including threatened and endangered species would be determined by the DNR. If the applicants file for a permit to cross a stream the DNR will determine the need for further review for the presence of aquatic threatened and endangered species under Wis. Stat. § 30.29. If necessary, the DNR can deny a permit or require mitigation procedures to protect any threatened or endangered species. Additional surveys for aquatic threatened or endangered species may be required by DNR as part of any permit review. The timber wolf is classified as a threatened species in Wisconsin and several wolf packs are known to be present in the area near the North Route.

Forests

Forests provide recreational opportunities, wildlife habitat, heating fuel, habitat for rare plants and animals, timber, and pulp for the paper industry. Building this high-voltage power line would require clearing many acres of trees and shrubs. Depending on where it occurs, this clearing could cause general loss and degradation of wooded habitat, pulp and timber losses, and forest fragmentation.

Degradation can occur when invasive species are carried into a forest inadvertently by construction equipment and when soil and light conditions are altered so as to encourage growth of weedy species. This can result in a loss of plant and animal diversity. Trimming and clearing of trees at certain times of the year can also contribute to the spread of oak wilt disease.

The production of trees for pulp and timber use is an important industry in northern Wisconsin. Because transmission line ROWs must be kept clear of woody vegetation that

grows taller than 10 to 12 feet, the area within the ROW would be permanently lost as a site for pulp and timber production. (See Chapter 5 for more information about impacts to forests.)

About 93 acres of upland forest would be cleared if the North Route is used. Overall, the dominant forest type on the North Route is aspen. ROW clearing for this route would affect approximately 45 acres of aspen forest. Although the route as proposed would share ROW with Old 8 Drive, Old 8 Drive is a gravel road that is heavily forested; a closed tree canopy covers much of the east-west length of this road. Forested wetlands also occur throughout the area and are most common along USH 8, north of the railroad grade just east of Tripoli (segment 447), on Prairie Rapids Road, and where the route traverses cross-country approximately one mile west of USH 51.

Forest fragmentation impact

An analysis of the forest fragmentation potential on the North Route was completed as described in Chapter 6. While forest blocks greater than 1,000 acres in size provide essential habitat for rarer species that require deep forest interior, smaller blocks, such as those 200-1,000 acres in size, are also large enough to function as nesting, denning, and breeding sites for many wildlife species. A detailed description of the possible effects of forest fragmentation is found in Chapter 5.

Two intact forest blocks greater than 200 acres in size were identified. Both are located in Oneida County near the eastern end of this route on segment 431. One block encompasses the area surrounding the proposed crossing at the Tomahawk River and includes some privately owned forest and forest lands owned by Tomahawk Timber Inc. The other block encompasses the forest area between Rocky Road and US 51. This area also includes some corporately owned lands as well as private forest lands.

Table 11-6 Potential forest fragmentation on the North Route

Segment #	Block Size (acres)	Percentage of Cover	Primary Types
431	270	54% 20% 15%	Red pine and jack Mixed hardwoods and conifers Coniferous wetland species
431	510	41% 43%	Aspen Deciduous hardwoods (maple, oak)

Industrial forest

The greatest concentration of industrial forest on the North Route is on the portion of the route east of the intersection of USH 8 and Old 8 Drive (segments 441b, 441a, 440a and 431). These forests are corporately owned and operated. Dominant species in these forests are red pine and aspen. Operations primarily involve chipping and pulping for paper products. Consolidated Papers, Inc. and Tomahawk Timber own the majority of these forests.

Land use

Archeological resources

There is one known historic site on the North Route. Somo Cemetery is located near USH 8. Placement of the poles so as to avoid impacts to the cemetery would be required.

Proximity of residences

Table 11-7 describes the number of homes along the North Route within 300 feet of the proposed transmission line.

Table 11-7 Proximity of residences to the proposed centerline

Distance (feet)	0-25	25-50	50-100	100-150	150-300	Total
Homes	2	1	7	9	21	40

Socioeconomic concerns

The North Route has its greatest concentration of residential land use near the eastern end as it passes through the community of Heafford Junction. However, there are homes and businesses located along the entire distance. The primary concerns with regard to homeowners and residential land use are property devaluation, aesthetic impacts, and foreclosure of future development opportunities. The greatest concentration of commercial land use is in the vicinity of Tripoli. There is also commercial and retail use of some properties near Killarney Lake and other recreational areas that lie to the east. As with residential land use, owners of commercial property are concerned about property devaluation and aesthetic impacts.

The potential for impacts on tourism is difficult to assess. Although the line would be adjacent to several well-traveled roads and highways, it would not be visible from the numerous lakes throughout the area, with the possible exception of Killarney Lake. Several similarly sized transmission lines are present in and around communities in the surrounding area that are also highly dependent on tourism (Rhineland, Eagle River, St. Germain). These areas continue to be highly valued as tourist destinations.

Central Route

The Central Route proceeds in an easterly direction parallel to USH 8 for 1.6 miles from the intersection of USH 8 and CTH YY. At a point approximately 1.6 miles east of CTH YY, the route shifts north to the Wisconsin Central Railroad corridor that lies parallel to USH 8. It follows the railroad corridor north and east around the town of Tripoli for 2.8 miles. The route then shifts back to USH 8 and parallels the highway corridor for 14.7 miles. The Central Route passes south of the town of Heafford Junction as it proceeds east to the

intersection of USH 8 and USH 51. Table 11-8 describes the segments that comprise the Central Route and some of the ROW and line design characteristics of the route segments.

Figure 11-2 Central Route

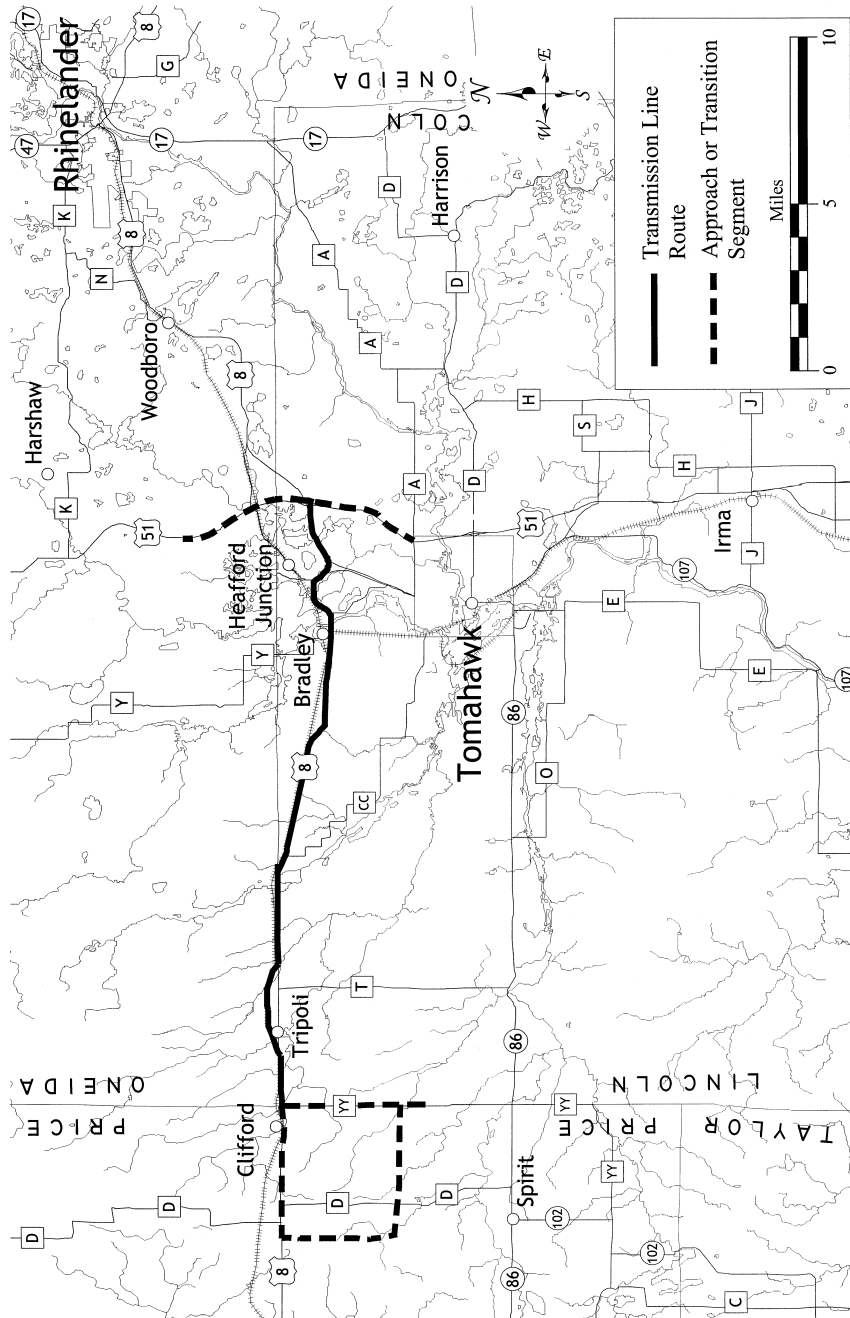


Table 11-8 Segments used in the Central Route

Segment	Length (miles)	Primary Land Use/Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length (feet)	Line Design *	Structure Height (feet)
462	0.3	Forest	1.0	43	100% USH 8	600-800	Single circuit	70-100
458	0.8	Agriculture	4.5	43	100% USH 8	600-800	Single circuit	70-100
457	0.5	Forest	3.0	43	100% USH 8	600-800	Single circuit	70-100
455	0.6	Forest	5.0	70	100% Railroad	600-800	Single circuit	70-100
451	0.6	Forest	5.5	70	100% Railroad	600-800	Single circuit	70-100
450	1.3	Forest	11.5	70	100% Railroad	600-800	Single circuit	70-100
449	0.2	Forest	2.0	80	None	600-800	Single circuit	70-100
444	2.7	Agriculture	14.5	43	100% USH 8	600-800	Single circuit	70-100
487	0.8	Forest	4.0	43	100% USH 8	600-800	Single circuit	70-100
438	6.7	Forest	35.0	43	100% USH 8	600-800	Single circuit	70-100
435	1.3	Forest/ Agriculture	6.5	43	100% USH8	600-800	Single circuit	70-100
433d	2.2	Forest	11.0	43	100% USH 8	600-800	Single circuit	70-100
433a	1.0	Forest	7.0	43	100% USH 8	600-800	Single circuit	70-100
Totals	19.0		110.5					

*All of the single circuit structures would consist of a steel davit-arm design shown in Figure 6-20 in Chapter 6.

Natural resources

Lakes

This route passes near several lakes and a flowage in the area around Heafford Junction, including the Rice River Flowage, Clear Lake, Halfmoon Lake, Crystal Lake, Muskellunge Lake, Deer Lake, and Bridge Lake. All are located close to USH 8. The line would not be constructed on or near the shoreline or lakebed of any of these lakes but could be visible from Bridge Lake and Muskellunge Lake, depending on which side of the highway is used and the amount of ROW clearing that would occur. Sedimentation into these water bodies would not occur if proper erosion control measures are implemented during construction.

Rivers and streams

The Central Route crosses Johnson, Hay, Brant, Scott, Rennhak, and Hauser Creeks. These creeks are part of the Little Somo watershed and several of them are classified as trout streams. The DNR has classified Brant Creek as an ORW.²⁶⁶ While most of these streambeds could be spanned using the proposed single pole davit arm design with a 600 to 800 foot span length, several of them, including Johnson, Hay, and Rennhak Creeks, are surrounded by wetlands. In order to avoid increased sedimentation to these streams from constructing in the associated wetlands, an adequate buffer zone would have to be maintained on either side of the wetland/stream complex and the wetlands would have to be spanned. If it were not possible to span the entire complex, increased damage to the wetlands would be likely. In the event that construction in the wetlands could not be avoided, a 50-foot construction-free buffer zone on either side of the stream could reduce the potential for sedimentation into the stream. Construction in wetlands during winter when the ground is frozen could minimize disruption of wetland soils and vegetation. (See the detailed description of construction practices in Chapter 6.)

This route crosses the Tomahawk River and the Little Somo River. The crossing of the Little Somo occurs in a fairly narrow stretch of the river on segment 444 about 3.5 miles east of Tripoli and adjacent to USH 8. It is likely that the river could be easily spanned in this stretch. If construction occurred with equipment either on or adjacent to the roadbed and an adequate buffer zone was maintained around the riverbed, impacts to this river could be minimized.

The route also crosses the Tomahawk River adjacent to USH 8. This setting is much more developed than the Tomahawk River crossing on the North Route. The existing USH 8 bridge is a large blue metal structure that accommodates two lanes of traffic. No fishing is allowed from the bridge. Placement of the transmission line adjacent to the bridge would be somewhat constrained by residential dwellings on the southwest side and the northeast side of the river. Clearing of several large trees adjacent to the river would be necessary.

Table 11-9 Rivers and streams on the Central Route

Brant Creek τ*	Little Rice River τ	Johnson Creek τ
Hauser Creek	Rennhak Creek	Tomahawk River
Little Somo River τ	Scott Creek τ	

τ Classified as a trout stream

* Designated Outstanding or Exceptional Resource Water

²⁶⁶ The DNR maintains a list of OERW of the state. ORWs include all national and state wild and scenic rivers. ORWs are defined as lakes or streams having excellent water quality, high recreational and aesthetic quality fishing and that are free from point source or non-point source pollution. ERWs are similar to ORWs in terms of water quality, recreational and aesthetic value and wildlife habitat but may be susceptible to future point source pollution. OERWs provide unique environmental settings that have not been significantly affected by human activities. The designated streams are identified in the state administrative code.

Wetlands

The Central Route traverses several small expanses of forested wetlands as it parallels USH 8. It also traverses one large wetland at a point where USH 8 turns south, approximately 2.5 miles west of Bradley. This is the largest identified expanse of wetlands on this route, encompassing 14 acres. The wetlands support a mixture of spruce/tamarack forest and shrub/scrub vegetation. Most of these wetland complexes lie to the north and south of the USH 8 ROW corridor. If the transmission line were located on this route, it would be necessary to develop an additional 43 feet of ROW parallel to the highway. If construction vehicles were limited to the roadbed or shoulder of USH 8 and construction was completed in the winter, impacts to the wetland vegetation and soils could be minimized. However, the presence of the transmission line would require that all vegetation in the ROW be maintained below a height that would interfere with the conductors. This would result in a permanent loss of tall-growing trees in the ROW.

Table 11-10 Wetland resources affected by the Central Route

Length of Forested Wetland Crossed	Length of Non-forest Wetland Crossed	Total Length of Wetland Crossed	Area of Wetland Affected
3.22 miles	1.25 miles	4.52 miles	23.5 acres

Wildlife

The proposed transmission line can impact wildlife through direct harm to some species and by altering the suitability of wildlife habitat. Construction activities can be noisy for a long enough period to discourage nesting or burrowing. Machinery and workers could crush vegetation that provides food, nesting sites, and cover in the ROW. Construction equipment driving through a stream can disturb the streambed and cause downstream siltation, degrading aquatic habitats of stream fauna. ROW clearance and line construction near lakes, rivers and streams can cause damage to fauna habitat from erosion and siltation. Transmission line corridors can fragment habitat by converting woodland to shrub and grassland (see the forest section for information on forest fragmentation) or degrade habitat through introduction of exotic invasive plant species. Chemicals used in controlling ROW vegetation near rivers and streams can drift or run off, polluting the water. Transmission line conductors, structures, and associated guy wires can pose a physical hazard to birds flying near the transmission line.

The timber wolf is classified as a threatened species in Wisconsin. The territory of several wolf packs is known to extend to lands near or adjacent to this route. Bird strikes are also a concern where the line would span rivers. Bald eagles and osprey have been observed along this route and could be present at many other locations within the project area. Rivers and their associated wetlands can also serve as corridors for daily and migratory flights by birds.

Threatened and endangered resources

A review of the Natural Heritage Inventory records indicates that the bald eagle (*Haliaeetus leucocephalus*) has been observed nesting on Clear Lake and in other locations along or near this route. The primary concern with this bird is disturbance of its nesting habitat in the early spring. Another concern is the potential for collisions with the transmission line while seeking food. Care should be taken to identify any nests that occur near the zone of construction. If nests are present, construction in these areas should occur in late summer or early fall after the nestlings have fledged.

Other than the possible presence of eagles, ospreys, and timber wolves, no threatened or endangered resources are known to be present on the Central Route.

Forests

Forests provide recreational opportunities, wildlife habitat, heating fuel, habitat for rare plants and animals, timber, and pulp for the paper industry. Building this high-voltage power line would require clearing many acres of trees and shrubs. Depending on where it occurs, this clearing could cause general loss and degradation of wooded habitat, pulp and timber losses, and forest fragmentation.

Degradation can occur when invasive species are carried into a forest inadvertently by construction equipment and when soil and light conditions are altered so as to encourage growth of weedy species. This can result in a loss of plant and animal diversity. Trimming and clearing of trees at certain times of the year can also contribute to the spread of disease.

Overall, the dominant forest type on the Central Route is aspen. ROW clearing for this route would affect approximately 38 acres of upland forest in all, of which 27 acres is aspen forest. Mixed hardwoods and conifers comprise about 4.5 acres each. One acre of pine plantation is also present near Half Moon Lake (segment 435). Forested wetlands occur throughout and are most common along USH 8.

One mile east of the intersection of Old 8 and USH 8, the route passes through approximately 4 miles of Lincoln County Forest land that lies on both sides of USH 8. An additional 43 feet of forest clearing would be required adjacent to the highway ROW to accommodate the proposed 115 kV transmission line. The Central Route would also affect lands owned and managed by Oneida County. The site of a former Civilian Conservation Corp (CCC) camp is located on the north side of USH 8 in Section 31, T36N R5E.

Forest fragmentation impact

An analysis of the forest fragmentation potential on the Central Route was completed as described in Chapter 6. Because this route follows existing road or railroad corridors for its entire length, no intact forest blocks greater than 200 acres in size would be affected by use of this route.

Industrial forest

Some industrial forest lands are located on the portion of the route east of Tripoli and between the intersection of USH 8 and Old 8 Drive and the Tomahawk River (segments 444 and 438). These forests are corporately owned and operated. Operations primarily involve chipping and pulping for paper products. Consolidated Papers, Inc. and Tomahawk Timber own these forests.

Land use

Archeological resources

SHSW records indicate that there is one known historic site on the Central Route. Somo Cemetery is located near USH 8. Placement of the poles so as to avoid impacts on the cemetery would be required.

Proximity of residences

Table 11-11 below describes the numbers of homes within 300 feet of the proposed centerline on the Central Route and their distance to the proposed line.

Table 11-11 Proximity of residences to the proposed centerline

Distance (feet)	0-25	25-50	50-100	100-150	150-300	Total
Homes	2	3	6	6	27	44

Socioeconomic concerns

Most of the residential and commercial land use associated with the Central Route is located just east of Tripoli. Some homes and businesses are also located just west of the intersection of USH 8 and USH 51. The local economy of the portion of the project area near the Tomahawk Flowage and the chain of lakes associated with Lake Nokomis is highly dependent on tourism. As at other locations, concerns regarding safety, property devaluation and aesthetic impact would exist.

The potential for impacts on tourism is difficult to assess. Although the line would be adjacent to several well-traveled roads and highways, it would not be visible from the numerous lakes throughout the area, with the possible exception of Bridge Lake. Several similarly sized transmission lines are present in and around communities in the surrounding area that are also highly dependent on tourism (Rhineland, Eagle River, St. Germain). These areas continue to be highly valued as tourist destinations.

South Route

The South Route proceeds cross-country in an easterly direction from CTH YY for 6.25 miles to Wilson School Road. The route parallels Wilson School Road for 0.75 miles and

then continues cross-country again to the south of Honey Road for an additional 2.3 miles. South of McCarthy Lake, the route begins to parallel Somo Dam Road for approximately two miles to the intersection of Somo Dam Road and CTH CC. It crosses the Little Somo River adjacent to Somo Dam Road. The route parallels CTH CC for approximately three miles crossing the Tomahawk River and passing through the northern part of Tomahawk. The route turns north about 0.25 mile east of the Tomahawk River and proceeds north for 0.25 mile before turning due east and proceeding cross-country for approximately 0.6 miles to CTH A. It parallels CTH A, turning north and then east to US 51.

Figure 11-3 South Route

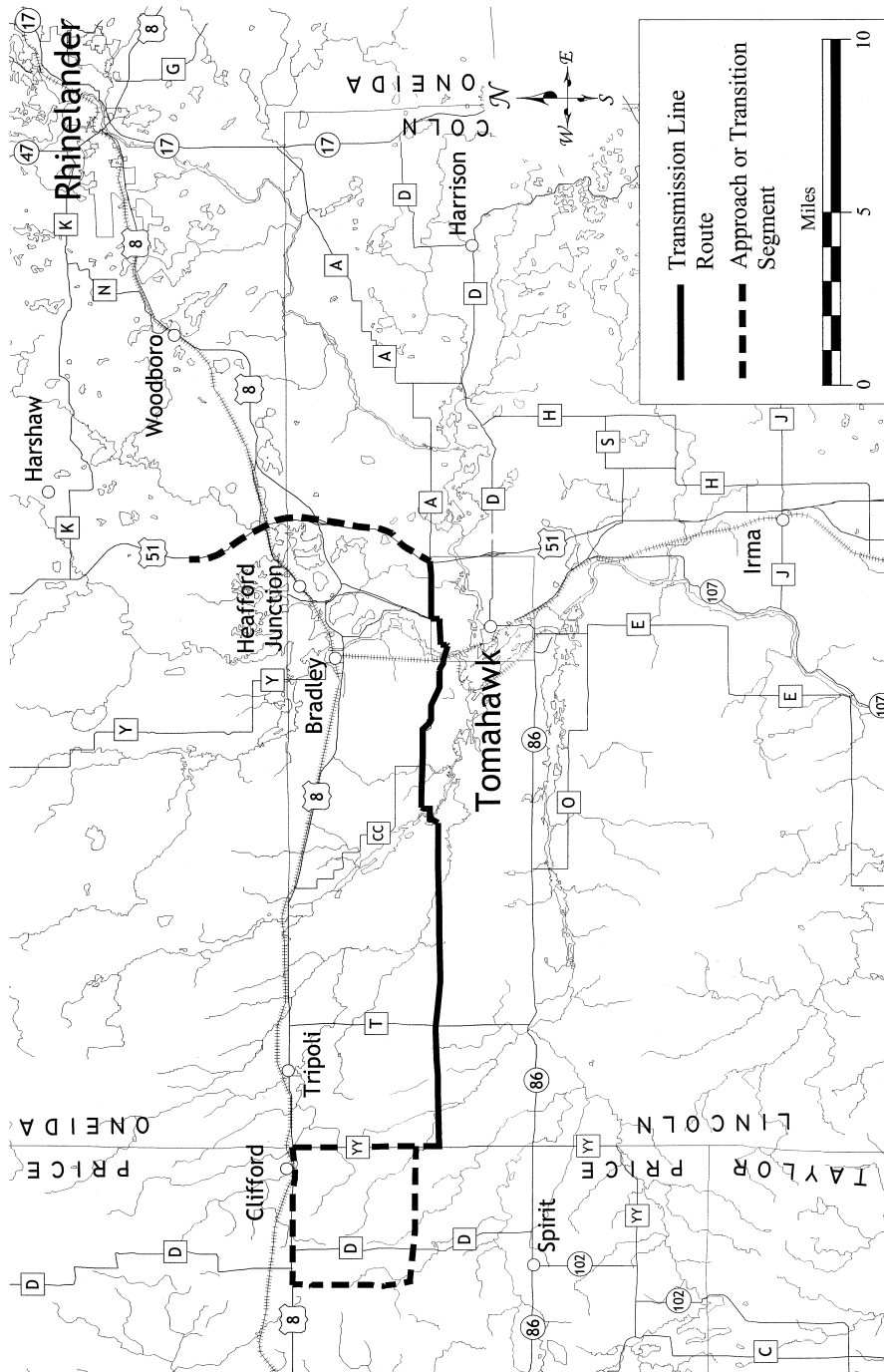


Table 11-12 Segments used in the South Route

Segment	Length (miles)	Primary Land Use/Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length (feet)	Line Design *	Structure Height (feet)
36v	1.4	Upland forest	13.5	80	None	600-800	Single circuit	70-100
474	12.9	Upland forest and scrub/shrub wetland	99.0	43/80	45% road	600-800	Single circuit	70-100
473	3.4	Scrub/shrub wetland	21.0	43/80	46% road	600-800	Single circuit	70-100
Total	17.7		133.5					

*All of the single circuit structures would consist of a steel davit-arm design shown in Figure 6-20 in Chapter 6.

Natural resources

Lakes

This route crosses the Little Somo River at the south end of Somo Lake and also follows Somo Dam Road as it angles along the southeast side of McCarthy Lake. The primary impact on these resources would be visual or aesthetic effects for those using the lake or residing on the lake. No structures would be placed on the shoreline or in the lakebed of these lakes.

Rivers and streams

The South Route crosses several small streams, including Squaw Creek, Flanigan Creek, Hay Creek, and Papoose Creek. Each has wetlands associated with it, and all three of these crossings would occur in an area that is devoid of roads, railroads, or other infrastructure corridors. Access for construction and maintenance would be difficult and could result in adverse effects on water quality, soils, vegetation and fauna in and adjacent to these streams. Construction and mitigation practices described in Chapter 6 would likely be required. Spanning the streams and their associated wetlands would likely result in the least impact to these resources. The route crosses Hay Creek adjacent to a road near the intersection of CTH CC and Somo Dam Road. Several of these creeks are classified as OERWs.²⁶⁷

The South Route also crosses the Little Somo River, the Big Somo River and the Tomahawk River. The Little Somo River is used for recreational canoeing and boating in the stretch just

²⁶⁷ The DNR maintains a list of OERW of the state. ORWs include all national and state wild and scenic rivers. ORWs are defined as lakes or streams having excellent water quality, high recreational and aesthetic quality fishing and that are free from point source or non-point source pollution. ERWs are similar to ORWs in terms of water quality, recreational and aesthetic value and wildlife habitat but may be susceptible to future point source pollution. OERWs provide unique environmental settings that have not been significantly affected by human activities. The designated streams are identified in the state administrative code.

south of Somo Dam. The DNR has raised concerns about aesthetic impacts for a river crossing in this area. The aesthetic concerns could be minimized if the transmission line could span the river and the poles were placed far enough back from the banks so that only the conductors would be visible from the river. The area surrounding the Little Somo River is heavily forested. Even though the line would parallel a roadway, it would be necessary to clear a 43-foot wide corridor. These clearing activities and loss of forest vegetation could impact water quality.

The Big Somo River is classified as an OWR of the state. The crossing of this river would be along a new ROW corridor about 0.5 mile east of Wilson School Road. The river could be spanned in this area, but water quality and aesthetic concerns would remain due to the need to clear and maintain a new ROW corridor through this area.

The proposed crossing of the Tomahawk River would occur south of CTH CC at a small hydro dam facility owned by WPSC. This site, east of Tannery Road, is quite close to the north edge of the city of Tomahawk.

Table 11-13 Rivers and streams on the South Route

Squaw Creek τ *	Hay Creek τ *	Big Somo River *	Tomahawk River
Flanigan Creek	Papoose Creek τ *	Little Somo River τ	

τ Classified as a trout stream

* Designated Outstanding or Exceptional Resource Water

Wetlands

The South Route affects 27 acres of wetlands with approximately 50 percent of this total being forested wetlands and the remaining 50 percent supporting mixed shrub/scrub vegetation. Nearly one mile of the route passes through sphagnum bog wetlands supporting ericaceous shrubs. The largest expanse of wetland is located along a cross-country portion of the route that crosses land owned by Lincoln County. There is an abandoned railroad grade in this area, but portions of it are difficult to discern since much of it is overgrown with shrubby vegetation. A field visit in January 2000 revealed that the abandoned railroad bed is used, in the winter, as an entrance to the area for logging purposes. Because this route affects more wetlands than the North or Central Routes and long portions of the route are cross-country with limited access from nearby roads or utility corridors, use of DNR's BMP and other wetland construction and mitigation methods would be important in minimizing impacts to these resources. (See Chapter 6.)

Table 11-14 Wetland resources affected by the South Route

Length of Forested Wetland Crossed	Length of Non-Forest Wetland Crossed	Total Length of Wetland Crossed	Area of Wetland Affected
1.43 miles	2.06 miles	3.5 miles	27.0 acres

Wildlife

The proposed transmission line can impact wildlife through direct harm to some species and by altering the suitability of wildlife habitat. Construction activities can be noisy for a long enough period to discourage nesting or burrowing. Machinery and workers could crush vegetation that provides food, nesting sites, and cover in the ROW. Construction equipment driving through a stream can disturb the streambed and cause downstream siltation, degrading aquatic habitats of stream fauna. ROW clearance and line construction near lakes, rivers and streams can cause damage to fauna habitat from erosion and siltation. Transmission line corridors can fragment habitat by converting woodland to shrub and grassland (see the forest section for information on forest fragmentation) or degrade habitat through introduction of exotic invasive plant species. Chemicals used in controlling ROW vegetation near rivers and streams can drift or run off, polluting the water. Transmission line conductors, structures, and associated guy wires can pose a physical hazard to birds flying near the transmission line.

The timber wolf is classified as a threatened species in Wisconsin. Wolf packs are known to be present in and near the area affected by this route. Bird strikes are also a concern where the line would span rivers. Bald eagles and osprey have been observed along this route and could be present at many other locations within the project area. Rivers and their associated wetlands can also serve as corridors for daily and migratory flights by birds.

Threatened and endangered resources

The bald eagle (*Haliaeetus leucocephalus*) has been observed in the Lincoln County Forest. The primary concern with this bird is disturbance of its nesting habitat in the early spring. Another concern is the potential for collisions with the transmission line while seeking food. Care should be taken to identify any nests that occur near the zone of construction. If nests are present, construction in these areas should occur in late summer or early fall after the nestlings have fledged.

Forests

The South Route would affect 69.0 acres of upland forest. The portion of the route that passes through the Lincoln County Forest is the most heavily forested section. Aspen is the dominant forest type along the South Route, however, 17 acres of hardwoods and 14.5 acres of conifers would also be affected.

Forest fragmentation impact

Forest management policies can differ throughout the heavily forested areas along this route (see Chapter 5), and forest fragmentation would be a substantial concern. An analysis of the forest fragmentation potential on the South Route was completed as described in Chapter 6. While forest blocks greater than 1,000 acres in size provide essential habitat for rarer species that require deep forest interior, smaller blocks, such as those 200-1,000 acres in size, are also large enough to function as nesting, denning, and breeding sites for many wildlife species. A detailed description of the possible effects of forest fragmentation is found in Chapter 5.

Three intact forest blocks greater than 200 acres in size were identified. They are located in Lincoln County near the western end of this route on segment 474. The proposed route would require creation of a new 80-foot wide corridor through the center of each of these forest blocks. One block is west of CTH T and includes the area surrounding Papoose Creek. Another, an immense span of upland forest interspersed with forested and shrub/scrub wetlands, lies between CTH T and Wilson School Road. The third block is located between Wilson School Road and Zenith Tower Road. The two blocks located west of Wilson School Road lie within a portion of the Lincoln County Forest. The third block is mostly privately owned forest land.

Table 11-15 Potential forest fragmentation on the South Route

Segment #	Block Size (acres)	Percentage of Cover	Primary Types
474	575	50% 20%	Aspen Mixed hardwoods and conifers
474	400	54% 12% 5%	Aspen Coniferous wetland Deciduous hardwoods (maple, oak)
474	560	34% 29% 20%	Aspen Red pine, jack pine and other coniferous Mixed deciduous hardwoods and conifers

In areas where a forest mosaic exists—a mixture of dense forest with forested wetlands and shrub scrub wetland, creating a transition zone between the forest edge and the centerline of the ROW could help to mitigate the fragmentation effects of a new transmission line ROW. This transition zone would consist of progressively lower growing shrub or thicket vegetation as the centerline is approached and then progressively taller vegetation moving from the centerline to the edge of the ROW. Although this technique could reduce the effects of fragmentation, it would not eliminate it.

Land use

Archeological resources

There are no archeological or historical sites noted by the SHSW on the South Route.

Proximity of residences

Table 11-16 below describes the number of homes within 300 feet of the proposed centerline on the South Route and their distance to the proposed line.

Table 11-16 Proximity of residences to the proposed centerline

Distance (feet)	0-25	25-50	50-100	100-150	150-300	Total
Homes	0	2	15	14	20	51

Socioeconomic concerns

The primary concentration of homes and businesses associated with the South Route occurs near the northwestern edge of the city of Tomahawk. In this area the line would be located in closer proximity to homes and businesses with fewer opportunities to make adjustments to the line to avoid these buildings. Concerns regarding safety, property devaluation and aesthetic impact have been raised. Further to the west, the area north of Somo Dam Road along Somo Lake and the Little Somo River is being subdivided and undergoing residential development. The aesthetic impacts and potential effects on property values associated with the line and ROW clearing may also be a concern for these residents.

Within the city limits, the South Route has been slightly altered to avoid running parallel to the Hiawatha Trail, a multiple use recreation trail that connects to the Bearskin Trail north of USH 8. As presently proposed, the route passes through a pine plantation and some industrial land to reach CTH A (Business USH 51).

Transition segments

Six possible transition segments parallel USH 51. One or more of these transition segments could be used to connect the North, Central, or South Routes to one of the three routes that proceed east from USH 51 to the Highway 8 Substation in Rhinelander. Tables 11-17, 11-18 and 11-19 describe some of the design characteristics of these “connector” segments.

Table 11-17 Approaches to routes east of USH 51 from the North Route

Segments	Approach to:	Length (miles)	Primary Land Use	New ROW (acres)	New ROW Width (feet)	Corridor Share	Structure Height (feet)
None*	Railroad Route						70-100
431, 425, 428	Highway 8 Route	3.9	Forest	20.5	43	USH 51 100 %	70-100
431, 425, 428, 429a, 430, 472	Cross Country Route	7.3	Forest/ agriculture	38.3	43	USH 51 100 %	70-100

*The eastern end of the North Route directly connects to the Railroad Route after crossing USH 51.

Table 11-18 Approaches to routes east of USH 51 from the Central Route

Segments	Approach to:	Length (miles)	Primary Land Use	New ROW (acres)	New ROW Width (feet)	Corridor Share	Structure Height (feet)
428,425	Railroad Route	1.5	Forest	8.0	43	USH 51 100 %	70-100
None*	Highway 8 Route						70-100
472,430	Cross Country Route	3.4	Forest/ agriculture	17.2	43	USH 51 100 %	70-100

* The Central Route proceeds directly into the Highway 8 Route after crossing USH 51.

Table 11-19 Approaches to routes east of USH 51 from the South Route

Segments	Approach to:	Length (miles)	Primary Land Use	New ROW (acres)	New ROW Width (feet)	Corridor Share	Structure Height (feet)
472,430,429a, 428,425	Railroad Route	4.9	Forest/ agriculture	25.9	43	USH 51 100 %	70-100
472,430	Highway 8 Route	3.3	Forest/ agriculture	17.2	43	USH 51 100 %	70-100
None*	Cross Country Route						70-100

* The South Route proceeds directly into the Cross Country Route after crossing USH 51.

Segment 425 runs in a general north-south direction along USH 51 from the Oneida County line to the intersection of the Wisconsin Central Railroad with USH 51. It crosses Manson Creek and some wetlands that lie to the east of Bridge Lake. There are no homes, business, schools, apartments or daycare centers within 300 feet of this segment.

Segment 428 runs in a general north-south direction along USH 51 for 0.6 miles from the intersection of USH 8 and USH 51 to the Oneida County line. The segment crosses Bridge Lake Tributary and approximately two acres of associated wetlands that connect Lost Lake and Bridge Lake. There are no homes, business, schools, apartments or daycare centers within 300 feet of this segment.

Segment 429a runs in a general north-south direction along USH 51 for approximately 0.1 mile near the USH 8 and USH 51 intersection. There are no homes, business, schools, apartments or daycare centers within 300 feet of this segment.

Segment 430 runs in a general north-south direction along USH 51 for approximately 2.8 miles from the USH 8 intersection with USH 51 to the ANR natural gas pipeline intersection with USH 51. The entire length of this segment is zoned as conservancy. The segment

crosses the western expanse of a forested wetland system that lies to the east of Muskellunge Lake. Approximately 8.5 acres of forest dominated by aspen would have to be cleared to accommodate the transmission line. There are no homes, businesses, schools, apartments or day care centers within 300 feet of this segment.

Segment 472 runs in a general north-south direction for 0.5 miles along USH 51 from the intersection with the ANR natural gas pipeline to the CTH A and USH 51 intersection. The segment crosses a small stretch of wetlands just to the south of the ANR natural gas pipeline and USH 51.

Alternative Routes East of USH 51 (USH 51 to the Highway 8 Substation)

Beginning at USH 51, there are three possible route alternatives that proceed east to the Highway 8 Substation in Rhinelander. All three route alternatives merge into a single route 3.5 miles south of the Rhinelander Highway 8 Substation at the intersection of Hat Rapids Road and an existing 115 kV transmission line corridor. From that point, all of the routes follow the existing 115 kV transmission line ROW to Rhinelander. The routes are named the Railroad Route, the Highway 8 Route, and the Cross Country Route. The routes and the potential impacts on resources along the routes are described below.

Railroad Route

The Railroad Route begins at the intersection of the Wisconsin Central Railroad and USH 51. This intersection is located approximately 1.5 miles north of the junction of USH 8 and USH 51. The route proceeds in an easterly direction, crossing Manson Creek and paralleling the railroad grade for 2.5 miles. The route then shifts to USH 8 and parallels the highway for 2.8 miles to Spring Creek Drive, passing to the north of Stag Lake. The route continues east and then south for 0.9 miles on Spring Creek Drive to Fire Tower Road. The route turns east and follows Fire Tower Road for 1.3 miles.

About 1.3 miles down Firetower Road, the Railroad Route diverts southeast off of Fire Tower Road for 0.2 miles to the ANR natural gas pipeline. The route runs parallel to the pipeline for 2 miles in a northeasterly direction, crossing Crescent Creek, and rejoins Fire Tower Road. The route proceeds east along Fire Tower Road for 0.6 miles to River Road and then turns south on River Road for 0.5 miles to Hat Rapids Road. The route proceeds east along Hat Rapids Road, crossing the Wisconsin River, for 1.75 miles to the intersection of Hat Rapids Road and an existing 115 kV transmission line. The route turns north to follow the existing 115 kV transmission line route for the remainder of the way to the Highway 8 Substation. The line would be constructed as a double circuit with the existing 115 kV line from Hat Rapids Road to the Highway 8 Substation in Rhinelander.

Figure 11-4 Railroad Route

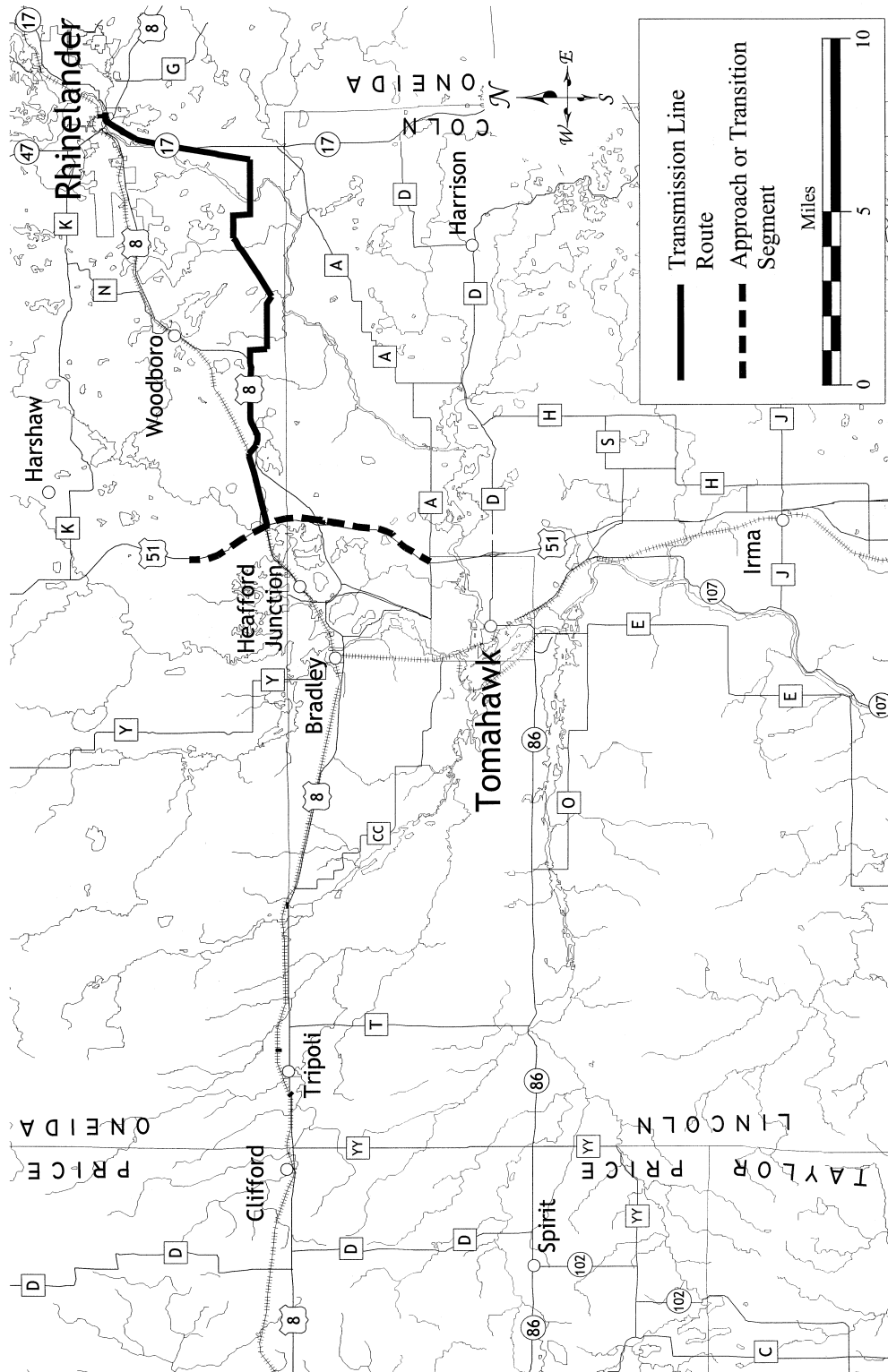


Table 11-20 Segments used in the Railroad Route

Segment	Length (miles)	Primary Land Use/Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length	Line Design *	Structure Height
423b	2.12	Forest	18.0	70	100% Wisconsin Central RR	600-800	Single Circuit	70-100
490	0.3	Forest/ Wetland	3.0	80	None	600-800	Single Circuit	70-100
424a	0.9	Forest/ Wetland	4.5	43	100% USH 8	600-800	Single Circuit	70-100
414	2.4	Forest/ Agriculture	12.5	43	100% USH 8, Spring Creek Rd.	600-800	Single Circuit	70-100
412	1.6	Forest/ Agriculture	15.0	43	100% Firetower Road	600-800	Single Circuit	70-100
411	2.1	Forest	15.0	55	100% ANR Natural Gas Pipeline	600-800	Single Circuit	70-100
410	2.8	Forest/ Agriculture	14.5	43	100% Firetower Road, River Road, Firetower road	600-800	Single Circuit	70-100
409x	1.0	Forest/Agri culture	0	0	100% existing transmission	600-800	Double Circuit	80-110
405x	2.5	Residential/ Forest	0	0	100% existing transmission	600-800	Double Circuit	80-110
402x	0.7	Forest/ Wetland	0	0	100% existing transmission	600-800	Double Circuit	80-110
401x	0.6	Commercial	0	0	100% transmission	600-800	Double Circuit	80-110
Totals	17.01		82.5					

*All of the single-circuit structures would consist of a steel davit-arm design shown in Figure 6-20 Chapter 6. Double circuit 115 kV, single steel pole structures will be similar to that shown in Figure Vol. 2-5.

Natural resources

Lakes

Near the western end of the Railroad Route, the line would pass north of Roe, Stag and Manson Lakes. No structures would be placed on the lakebed or shoreline. It is unlikely that the new 115 kV line could be seen from these lakes but users of the lake could view the transmission line as they drive on the highway traveling to and from the lakes.

Sedimentation to the streams and rivers that are near these lakes would be a concern. Winter construction or maintaining an adequate buffer zone near the lakes would help to minimize this impact.

Rivers and streams

This route crosses Manson Creek as it parallels the railroad corridor. It also crosses Trout Creek, Jennie Creek, Crescent Creek and an unnamed creek. Several of these creeks are designated trout streams. All could be spanned using the proposed davit arm design. Limiting construction vehicles to the railroad bed or road shoulder and maintaining an adequate buffer zone of at least 50 feet on either side of the streams would help to minimize sedimentation to the creeks.

The Railroad Route crosses the Wisconsin River parallel to Hat Rapids Road immediately south of Hat Rapids Dam. Upland forest exists on both sides of the river. The river setting south of Hat Rapids Road is quite scenic. It would be necessary to remove a 43-foot wide strip of forest to accommodate the new transmission line corridor parallel to the road. The area immediately below the dam, north of Hat Rapids Road, is a well-frequented spot for fishing. The new line could be a visual intrusion for anglers in this area.

Table 11-21 Rivers and streams on the Railroad Route

Trout Creek τ	Crescent Creek τ	Unnamed Creek
Jennie Creek τ	Manson Creek	Wisconsin River

τ Classified as a trout stream

Wetlands

ROW clearing and construction of the line on the Railroad Route would affect 19 acres of wetland. About 11.5 of these acres support shrub/scrub vegetation and 7.5 acres are forested wetlands. The forested wetlands are part of a large lake and wetland complex associated with Roe, Stag and Manson Lakes (segments 590, 424, and 414). A corridor that is constructed through this forested wetland would require clearing of trees near the conductors, increasing the potential for forest fragmentation. As proposed, the route runs parallel to USH 8 in this area, which could reduce the effects of fragmentation. Further west, as the route parallels the railroad corridor, it passes through about one mile of shrub swamp that is adjacent to the railroad bed.

Table 11-22 Wetland resources affected by the Railroad Route

Length of Forested Wetland Crossed	Length of Non-forest Wetland Crossed	Total Length of Wetland Crossed	Area of Wetland Affected
1.31 miles	1.29 miles	2.58 miles	19.0 acres

Wildlife

The proposed transmission line can impact wildlife through direct harm to some species and by altering the suitability of wildlife habitat. Construction activities can be noisy for a long enough period to discourage nesting or burrowing. Machinery and workers could crush vegetation that provides food, nesting sites, and cover in the ROW. Construction equipment driving through a stream can disturb the streambed and cause downstream siltation, degrading aquatic habitats of stream fauna. ROW clearance and line construction near lakes, rivers and streams can cause damage to fauna habitat from erosion and siltation. Transmission line corridors can fragment habitat by converting woodland to shrub and grassland (see the forest section for information on forest fragmentation) or degrade habitat through introduction of exotic invasive plant species. Chemicals used in controlling ROW vegetation near rivers and streams can drift or run off, polluting the water. Transmission line conductors, structures, and associated guy wires can pose a physical hazard to birds flying near the transmission line.

Threatened and endangered resources

Natural Heritage Inventory records indicate that no threatened or endangered species are known to be present along this route. However, it is recognized that bald eagles (*Haliaeetus leucocephalus*) have been observed fishing and nesting in areas near the lakes and along the Wisconsin River. The primary concern with this bird is disturbance of its nesting habitat in the early spring. Another concern is the potential for collisions with the transmission line while seeking food. Care should be taken to identify any nests that occur near the zone of construction. If nests are present, construction in these areas should occur in late summer or early fall after the nestlings have fledged.

Forests

The Railroad Route would require clearing 32.0 acres of upland forest. The majority of this acreage would be along Firetower Road and a 1.25 mile section of the ANR pipeline corridor. No additional clearing would be required through the northern hardwood forest parallel to USH 17 where the new line would be double circuited with an existing 115 kV line.

Forest fragmentation impact

An analysis of forest fragmentation potential, as described in Chapter 6, indicates that there is a large block of northern hardwood acreage, in excess of 675 acres, on the Cross Country portion of this route that runs parallel to the existing ANR natural gas pipeline (Segment 411). The pipeline ROW has already created a narrow clearing through this area. Widening

the ROW for the new transmission line would have an incremental effect on the fragmentation of this forest block.

A 7.5-acre stand of conifers on segment 412 where the route parallels Firetower Road would also be affected in addition to a 4.5-acre pine plantation along this same segment.

Table 11-23 Potential forest fragmentation on the Railroad Route

Segment #	Block Size (acres)	Percent age of Cover	Primary Types
411	675	53%	Mixed deciduous hardwoods (maple, oak, ash),
		23%	Aspen
		5%	Mixed hardwoods and conifers

Approximately 25 feet of ROW overlap would occur and an additional 55 feet would have to be cleared of all tall-growing trees.

Land use

Archeological

No known archeological or historical resources have been identified along this route.

Proximity of residences

Table 11-24 describes the number of homes along the Railroad Route within 300 feet of the proposed transmission line.

Table 11-24 Proximity of residences to the proposed Railroad Route

Distance (feet)	0-25	25-50	50-100	100-150	150-300	Total
Homes	0	1	7	10	41	59

Two nursing homes and one school are located between 100 and 300 feet from the proposed centerline. The school and the home that is within 50 feet of the line are located near segments where the new line would be double circuited with an existing 115 kV transmission line.

Socioeconomic concerns

The Railroad Route passes through a concentration of residences at its western end where the railroad corridor parallels CTH N. There is heavy recreational use in this area and on the nearby lakes. Businesses associated with the tourist trade are located near USH 8 and on the shores of these lakes. Other small concentrations of homes are present along River Road

0.5 mile west of the Wisconsin River and where the route parallels STH 17 as it approaches Rhinelander. There is also scattered commercial development, in addition to more dense commercial development near the Highway 8 Substation in Rhinelander. Property devaluation, aesthetics and concerns about EMF are the primary concerns raised by persons residing and recreating along the proposed route. More information about these environmental affects can be found in Chapter 5 and Appendix D.

Although the Railroad Route as presented here rejoins USH 8 along the north side of Manson Lake, another option would be to continue along the railroad corridor for another 1.5 miles (using segment 423a) and rejoin USH 8 northeast of Stag Lake. Use of this option could affect a parcel of land owned by Oneida County that has been designated as a memorial to veterans of World War I and World War II.

Highway 8 Route

The Highway 8 Route parallels USH 8 east of USH 51 until USH 8 intersects with Spring Creek Drive. From this point eastward, the Highway 8 Route is identical to the Railroad Route. The route continues east and south for 0.9 miles on Spring Creek Drive to Fire Tower Road where it follows the road east for 1.3 miles. From this point, it diverts southeast off of Fire Tower Road for 0.2 miles to the ANR natural gas pipeline. The Highway 8 Route runs parallel to the pipeline for 2 miles in a northeasterly direction, crossing Crescent Creek, to Fire Tower Road. The route proceeds east along Fire Tower Road for 0.6 miles to River Road and then south on River Road for 0.5 miles to Hat Rapids Road. The route proceeds east along Hat Rapids Road, crossing the Wisconsin River, for 1.75 miles to the intersection of Hat Rapids Road and an existing 115 kV transmission line. The route turns north to follow the existing 115 kV transmission line route for the remainder of the way to the Highway 8 Substation. The line would be constructed as a double circuit with the existing 115 kV line from Hat Rapids Road to the Highway 8 Substation in Rhinelander.

Figure 11-5 Highway 8 Route

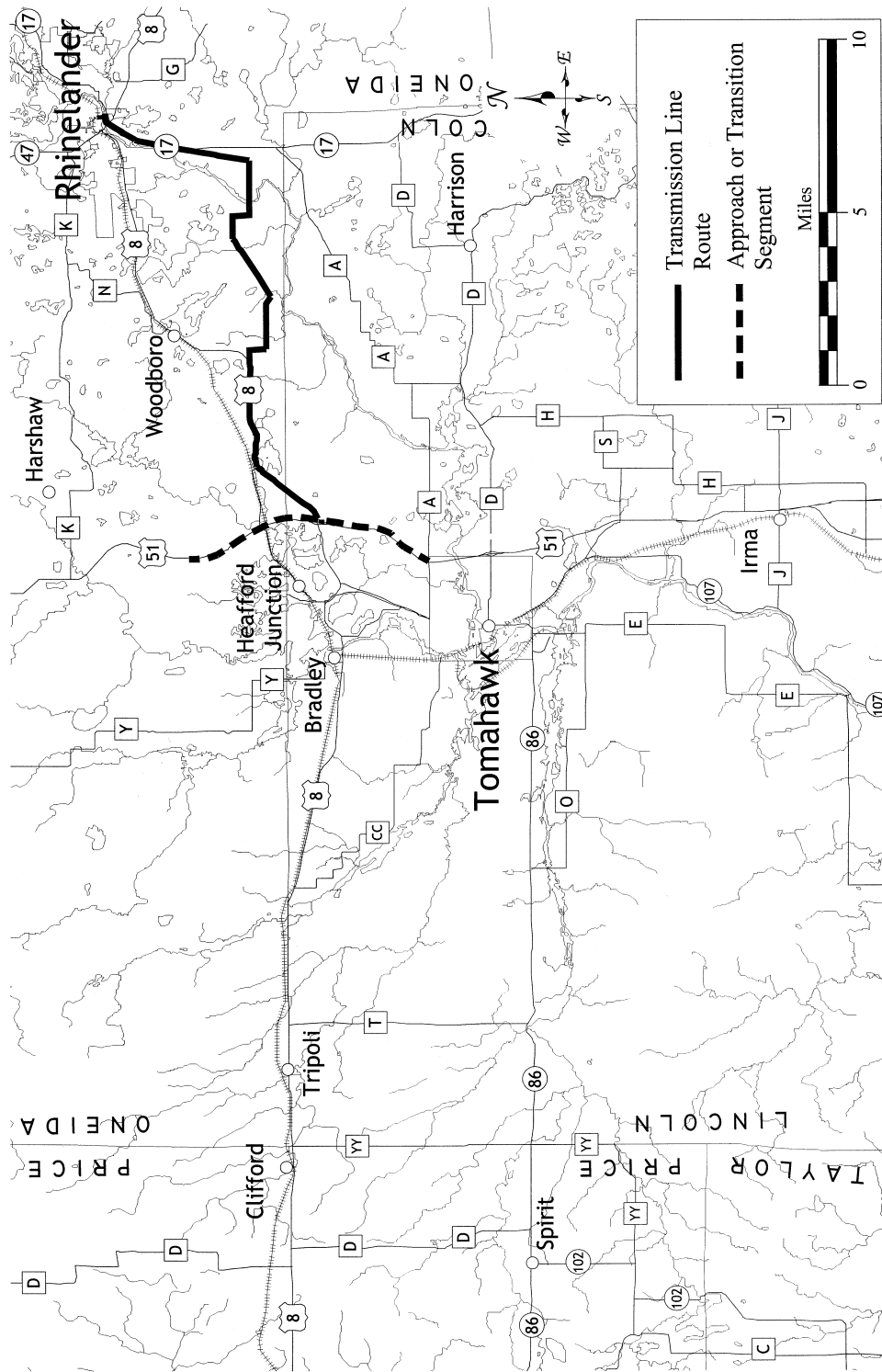


Table 11-25 Segments used on the Highway 8 Route

Segment	Length (miles)	Primary Land Use/Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length	Line Design *	Structure Height (feet)
427	0.8	Forest	4.0	43	100% USH 8	600-800	Single circuit	70-100
424b	0.9	Forest/ Residential	4.5	43	100% USH 8	600-800	Single circuit	70-100
424a	0.9	Forest/ Wetland	4.5	43	100% USH 8	600-800	Single circuit	70-100
414	2.4	Forest/ Agriculture	12.5	43	100% USH 8, Spring Creek Road	600-800	Single circuit	70-100
412	1.6	Forest/ Agriculture	15.0	43	100% Firetower Road	600-800	Single circuit	70-100
411	2.1	Forest			100% ANR Natural Gas Pipeline	600-800	Single circuit	70-100
410	2.8	Forest/ Agriculture	14.5	43	100% Firetower Road, River Road	600-800	Single circuit	70-100
409x	1.0	Forest/ Agriculture	0	0	100% transmission	600-800	Double circuit	80-110
405x	2.5	Residential/ Forest	0	0	100% transmission	600-800	Double circuit	80-110
402x	0.7	Forest/ Wetland	0	0	100% transmission	600-800	Double circuit	80-110
401x	0.6	Commercial	0	0	100% transmission	600-800	Double circuit	80-110
Total	15.4		55					

*All of the single-circuit structures would consist of a steel davit-arm design shown in Figure 6-20 Chapter 6. Double circuit 115 kV, single steel pole structures will be similar to that shown in Figure Vol. 2-5.

Natural resources

Because the Highway 8 Route and the Railroad Route differ only at their western end, the potential environmental effects of building and maintaining a 115 kV transmission line on the Highway 8 Route are very similar to the impacts described for the Railroad Route. Unless otherwise noted, the effects can be assumed to be the same.

Wetlands

ROW clearing and construction of the line on the Highway 8 Route would affect 14 acres of wetlands, slightly less acreage than on the Railroad Route. Over half of this acreage supports forested wetlands. These forested wetlands are part of a large lake and wetland complex associated with Roe, Stag and Manson Lakes (segments 590, 424, and 414). A corridor that is constructed through this forested wetland would require clearing of trees near the conductors, increasing the potential for forest fragmentation. The route runs parallel to USH 8 in this area, which may reduce the effects of fragmentation.

Table 11-26 Wetland resources affected by the Highway 8 Route

Length of Forested Wetland Crossed	Length of Non-forest Wetland Crossed	Total Length of Wetland Crossed	Area of Wetland Affected
1.55 miles	0.68 miles	2.16 miles	14.0 acres

Forests

The Highway 8 Route would require clearing 30.0 acres of upland forest, consisting of primarily northern hardwood, aspen and conifer. All of the larger hardwood forest areas affected by the Railroad Route, including the large forest block on segment 411, would also be impacted by use of this route.

Land use

Archeological

No known archeological or historical resources have been identified along this route.

Proximity of residences

Although this route is not in close proximity to the concentration of homes on CTH N north of the railroad, there is an additional cluster of 10 homes in the Manson Lake area. Table 11-27 shows the number of homes within 300 feet of the proposed Highway 8 Route.

Table 11-27 Highway 8 Route homes within 300 feet

Distance (feet)	0-25	25-50	50-100	100-150	150-300	Total
Homes	1	2	8	10	48	69

In addition to a school and two nursing homes, there is a park and one commercial building between 100 and 150 feet from the proposed centerline.

Socioeconomic concerns

As with the Railroad Route, the bulk of the residential and commercial development is at the western end of the route. Property devaluation, safety, and aesthetics are likely to be the greatest social and economic concerns. Tourism is an important contribution to the local economy in this area. A new transmission line routed along USH 8 would be visible to many permanent residents, summer residents, and tourists as they travel throughout the area. The potential for impacts on tourism is difficult to assess. Several similarly sized transmission lines are present in and around communities in the surrounding area that are also highly dependent on tourism (Rhineland, Eagle River, St. Germain). These areas continue to be highly valued as tourist destinations.

Cross Country Route

From USH 51 the Cross Country Route proceeds in an easterly direction for four miles paralleling CTH A. It crosses the Wisconsin River adjacent to CTH A. At the point where CTH A turns north, the route continues east Cross-country for one mile, crosses CTH H and passes through the University of Wisconsin-Stevens Point Treehaven property for two miles until it intersects with an existing 115 kV transmission line corridor. The route then proceeds in a northeasterly direction parallel to the existing 115 kV transmission line for 7.1 miles to Hat Rapids Road. WPSC proposes to build this portion of the line as a single circuit 115 kV line parallel to the existing 115 kV transmission line. North of Hat Rapids Road, the two lines would be double circuited for the remaining 3 to 5 miles to the Highway 8 Substation.

Table 11-28 Segments used in the Cross Country Route

Segment	Length (miles)	Primary Land Use/Cover	New ROW (acres)	New ROW Width (feet)	Corridor Sharing	Span Length (feet)	Line Design *	Structure Height (feet)
415	14	Forest	88	80/4 3/0	29% CTH A; 50% transmission	600-800	Single circuit	70-100
409x	1.0	Forest/ Agriculture	0	0	100% transmission	600-800	Double circuit	80-110
405x	2.3	Residential/ Forest	0	0	100% transmission	600-800	Double circuit	80-110
402x	0.7	Forest/ Wetland	0	0	100% transmission	600-800	Double circuit	80-110
401x	0.6	Commercial	0	0	100% transmission	600-800	Double circuit	80-110
Total	18.6		88					

*All of the single circuit structures would consist of a steel davit-arm design shown in Figure 6-20 Chapter 6. Double circuit 115 kV single steel pole structures will be similar to that shown in Figure Vol. 2-5.

Natural resources

Lakes

The Cross Country Route passes very near Lake Alice, Harrison Lake, Mable Lake, Squaw Lake and Clark Lake. It would not be necessary to place poles on or near the shoreline or lakebed. The line would result in a visual impact for people engaging in recreational activities on the lakes.

Rivers and streams

The Cross Country Route crosses Pickerel Creek, Noisy Creek, and Squaw Creek. Noisy Creek is a designated trout stream. The route also crosses, adjacent to CTH A, a channel that connects Clark Lake and Lake Alice. These streams could be spanned using the proposed transmission line design.

The route crosses the Wisconsin River adjacent to CTH A. The landscape immediately surrounding this crossing is quite open. A permanent residence and four rental cottages are located on the southwest side of the river. In addition, businesses are located on the north side across from these dwellings and on the southeast side of the river. A 24.9 kV distribution line with 3-phase distribution underbuild is presently located along the south side of CTH A. Routing the 115 kV line on the south side of the highway, using the distribution line ROW, would require placing a very prominent structure in close proximity (within 30 feet) to the residence and one of the cottages. Placing the line on the north side of CTH A or moving the distribution circuits to the north side would result in electric utility poles on both sides of the

road. Because of the wide open approach to the river, a double circuited line transmission line would be highly visible to boaters on the river and patrons of the businesses.

Table 11-29 Rivers and streams on the Cross Country Route

Pickeral Creek	Noisy Creek ^τ	Squaw Creek
Wisconsin River	Unnamed channel	

^τ Classified as a trout stream

Wetlands

ROW clearing and construction of the line on the Cross Country Route would affect 18.5 acres of wetlands. Between CTH H and the intersection with the existing 115 kV transmission line, the route would require development of over one mile of new 80-foot wide ROW through wetlands. Most of these wetlands support coniferous swamp or bog species (tamarack, spruce, white cedar, balsam fir) over a sphagnum mat, making them very susceptible to long-term construction damage.

Another concentration of wetlands on this route occurs north of Harrison Flowage on Lincoln County Forest land and a privately held parcel within the country forest. The new 115 kV line is proposed to be constructed parallel to the existing 115 kV line in this area and would require additional ROW clearing.

Table 11-30 Wetland resources affected by the Cross Country Route

Length of Forested Wetland Crossed	Length of Non-forest Wetland Crossed	Total Length of Wetland Crossed	Area of Wetland Affected
1.55 miles	0.72 miles	2.27 miles	18.5 acres

Wildlife

The proposed transmission line can impact wildlife through direct harm to some species and by altering the suitability of wildlife habitat. Construction activities can be noisy for a long enough period to discourage nesting or burrowing. Machinery and workers could crush vegetation that provides food, nesting sites, and cover in the ROW. Construction equipment driving through a stream can disturb the streambed and cause downstream siltation, degrading aquatic habitats of stream fauna. ROW clearance and line construction near lakes, rivers and streams can cause damage to fauna habitat from erosion and siltation. Transmission line corridors can fragment habitat by converting woodland to shrub and grassland (see the forest section for information on forest fragmentation) or degrade habitat through introduction of exotic invasive plant species. Chemicals used in controlling ROW vegetation near rivers and streams can drift or run off, polluting the water. Transmission line conductors, structures, and associated guy wires can pose a physical hazard to birds flying near the transmission line.

Threatened and endangered resources

Natural Heritage Inventory records indicate that wood turtles (*Clemmys insculpta*) are present on segment 415. Wood turtles prefer lowland hardwood forests and open wet meadows associated with streams and rivers with sand or gravel substrates. Avoiding construction traffic within 50 feet of stream banks and within the stream itself could minimize impacts to these turtles. Construction should also be avoided within 1,000 feet of the banks of streams in these areas from June to late September as this coincides with the egg laying and hatching period.

Bald eagles (*Haliaeetus leucocephalus*) have been observed along several areas along the Cross Country Route. The primary concern with this bird is disturbance of its nesting habitat in the early spring. Another concern is the potential for collisions with the transmission line while seeking food. Care should be taken to identify any nests that occur near the zone of construction. If nests are present, construction in these areas should occur in late summer or early fall after the nestlings have fledged.

Timber wolves, an endangered species in Wisconsin, have also been sighted along this proposed route. Many of these sightings have been made by students, faculty, and visitors to Treehaven, the UW-SP educational field station for environmental management training, outreach and natural resources research.

Forests

Forests provide recreational opportunities, wildlife habitat, heating fuel, habitat for rare plants and animals, timber, and pulp for the paper industry. Building this 115 kV power line would require clearing many acres of trees and shrubs. Depending on where it occurs, this clearing could cause general loss and degradation of wooded habitat, pulp and timber losses, and forest fragmentation.

Degradation can occur when invasive species are carried into a forest inadvertently by construction equipment and when soil and light conditions are altered so as to encourage growth of weedy species. This can result in a loss of plant and animal diversity. Trimming and clearing of trees at certain times of the year can also contribute to the spread of disease.

The production of trees for pulp and timber use is an important industry in northern Wisconsin. Because transmission line ROWs must be kept clear of woody vegetation that grows taller than 10 to 12 feet, the area within the ROW would be permanently lost as a site for pulp and timber production. (See Chapter 5 for more information about impacts to forests.)

Overall, the dominant forest types on the Cross Country Route are aspen and northern hardwoods. ROW clearing for this route would affect approximately 51 acres of upland forest, including 19.5 acres of northern hardwoods and 22.5 acres of aspen. The majority of the forest impacts would occur on segment 415. No new ROW clearing would occur on the portion of the existing 115 kV line ROW north of Hat Rapids Road.

Forest fragmentation impact

An analysis of the forest fragmentation potential on the Cross Country Route was completed as described in Chapter 6. While forest blocks greater than 1,000 acres in size provide essential habitat for rarer species that require deep forest interior, smaller blocks, such as those 200 to 1,000 acres in size, are also large enough to function as nesting, denning, and breeding sites for many wildlife species. A detailed description of the possible effects of forest fragmentation is found in Chapter 5.

One forest block greater than 1,000 acres in size and three blocks between 200 and 1,000 acres in size were identified. They are all located in Lincoln County near the eastern end of this route on segment 415. Two of the blocks, including the largest one, are presently bisected by the existing 115 kV transmission line. The remaining two blocks consist of intact forest, on the east and west side of CTH H, that is not affected by any other utility infrastructure corridors.

The blocks along the existing 115 kV line are comprised of a mixture of Lincoln County Forest land and private land. The block on the east side of CTH H is owned by the UW-SP Foundation and the forest block on the west side of CTH H is comprised of private lands held by a number of landowners.

Of special concern is the forested area owned by the UW-SP Foundation, that is part of a large parcel of land known as the Treehaven property. The Treehaven parcel is located near the junction of the proposed Cross Country Route and the existing 115 kV transmission line route. This property has been developed as the UW-SP College of Natural Resources' principal educational field station for students and faculty. Outdoor education programs are also offered at Treehaven for a considerable number of external client groups. The value of the property for this use relies on the availability of contiguous blocks of non-fragmented land that represent natural landscapes and high quality habitat. Long-term land use and management plans for the property have been developed and the proposed transmission is not compatible with the objectives of these plans.

Table 11-31 Potential forest fragmentation on the Cross Country Route

Segment #	Block Size (acres)	Percentage of Cover	Primary Types
415*	2150	36% 27% 8% 6%	Deciduous hardwoods (maple, oak, ash, etc) Aspen Coniferous wetland species Mixed hardwood and conifer wetland species
415*	880	50% 21% 9%	Deciduous hardwoods (maple, oak, ash, etc) Aspen Coniferous wetland species
415	725	33% 29% 13%	Aspen Deciduous hardwood (maple, oak, ash, etc) Mixed hardwood and conifer wetland species
415	415	34% 25% 16% 12%	Aspen Deciduous hardwoods (maple, oak, ash, etc) Mixed hardwood and conifer wetland species Mixed hardwood and conifer upland species

* Bisected by an existing 115 kV transmission line.

Industrial forest

There is little or no industrial forest land on the Cross Country Route.

Land use**Archeological resources**

One homestead and a cemetery, located on segment 405, are listed in the records of the SHSW. In addition, the Martin Lynch Homestead and Cemetery is located on segment 409. The proposed 115 kV line would be double circuited with an existing 115 kV transmission line along both of these segments. No additional visual impacts would be incurred.

Proximity of residences

Table 11-32 describes the number of homes along the Cross County Route within 300 feet of the proposed transmission line.

Table 11-32 Cross Country Route homes within 300 feet

Distance (feet)	0-25	25-50	50-100	100-150	150-300	Total
Homes	0*	2*	4	9	20	35

* These values could be higher if the line is placed on the south side of CTH A.

Socioeconomic concerns

Some residential and commercial development is found near both ends of the Cross Country Route, but the greatest amount of development occurs at its eastern end, near Rhinelander, where the line would be double circuited. Several commercial businesses associated with recreation and tourism are located along CTH A and residences are primarily clustered along CTH A near the Wisconsin River and along STH 17. The major socioeconomic concerns of residents and business operators would be property devaluation, aesthetic impacts, EMF, and loss of revenue from reduced use of the area by tourists.

Treehaven, an educational field station for environmental management, training, outreach, and research operated by the College of Natural Resources at the UW-SP, is located on this route. In addition to the significant environmental impact to the 1,400-acre property, the proposed transmission line could disrupt the operation of sensitive Global Positioning System devices routinely used by the College for studies conducted on the Treehaven property. The presence of the line could make this state-of-the-art electronic survey equipment less useful, or render it unusable. In turn, this could make the property a less desirable place to study the ecology of the area and result in the loss of a quality research facility and revenue source for the UW System.

In addition to its research and education functions, Treehaven's facilities, including lodging, a restaurant, a library, and a trails system. These trails are open to the public for passive recreation use, such as hiking, cross-country skiing, and bird-watching. The presence of a new

transmission line across the property could alter the character of the property so as to make it less enjoyable for these uses.